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PRECIOUS STONES AND THEIR LORE

DR. George Frederick Kunz, the gem expert, although an American, is by reputation international. For, besides membership in important American scientific societies, he is connected with various scientific bodies abroad. A vice-president of a very large jewelry house, whose name comes as readily to the tongue as that of any of the great department stores, he being the gem expert of the establishment, his expert aid also is eagerly sought elsewhere. He is, for example, a trustee of the Metropolitan Museum of Art, and the Honorary Curator of precious stones of the American Museum of Natural History.

This expert has served, 1883-1909, as special agent to the United States Geologic Survey. At the Paris Exposition of 1889, the department of mines had him for its head. (He is Vice-President of the American Institute of Mining Engineers). After the exposition the French Government made him an Officier d'Instruction Publique, and bestowed upon him the Legion of Honour, creating him an Officier of the order. He also has German, Norwegian and Japanese orders, and the Ph. D of the University of Marburg.

Besides over two hundred papers on gems, minerals, meteorites, folklore, etc., contributed to magazines, or printed as brochures, Dr. Kunz is the author of several important books on his specialty. These include his "Gems and Precious Stones of North America," "The Book of the Pearl" (of which Charles H. Stevenson is co-author), and "The Curious Lore of Precious Stones." The last-named, from the press of the Lippincotts, is replete with curious and interesting information, and, like all of Dr. Kunz's work, executed most charmingly.

For the Middle Ages and even down to the seventeenth century, the talismanic virtues of precious stones were believed in by high and low, by princes and peasants, by the learned as well as by the ignorant. Here and there, however, a note of scepticism was sometimes apparent, as in the famous reply of the court jester of Emperor Charles V, to the question, "What is the property of the turquoise?" "Why," replied he, "if you should happen to fall from a high tower whilst you were wearing

a turquoise on your finger, the turquoise would remain unbroken."

The doctrine of sympathy and antipathy found expression in the belief that the very substance of certain stones was liable to modification by the condition of health or even by the thoughts of the wearer. In case of sickness or approaching death the lustre of the stones was dimmed, or else their bright colours were darkened, and unfaithfulness or perjury produced similar phenomena. Concerning the turquoise, the prosaic explanation can be offered that this stone is affected to a certain extent by the secretions of the skin; but popular superstition saw the same phenomena in the ruby, the diamond, and other stones not possessing the sensitiveness of the turquoise. Hence the true explanation is to be found in the prevailing idea that an occult sympathy existed between stone and wearer.

A French writer, Mme. Catulle Mendès, gives expression to this when she says that she always wears as many of her rings as possible, because her gems feel slighted when she leaves them unworn. "I have a ruby," she continues, "which grows dull, two turquoises which become pale as death, aquamarines which look like siren's eyes filled with tears, when I forget them too long. How sad I should feel if precious stones did not love to rest upon me."

It is impossible to over-estimate the effect of colour in determining the supposed influence of gems upon the fortunes or health of the wearers. When we gaze upon the beautiful play of light emitted by a fine ruby or sapphire, we are all conscious of the æsthetic effect produced; but in earlier times, when scientific ideas were not yet prevalent, many other considerations combined to give a peculiar significance to these brilliant gems. Rare and costly as they were, they were supposed to possess mystic and occult powers and were thought to be the abode of spirits, sometimes benevolent and sometimes malevolent, but always endowed with the power to influence human destinies for weal or woe. Coupled with this was the instinctive appreciation of the essential qualities of certain rays of light, and modern science, far from doing away with these ideas, has rather seemed to find a good reason for them. We all know the therapeutic value of the ultra-violet rays, and when the uninstructed mind saw therein the embodiment of purity and chastity, it perhaps realized this health-giving and beneficent function. In the same way the idea of passion was associated with the radiant ruby, another concept the relative truth of which has been demonstrated by spectrum analysis, since the red rays are heat-giving and vivifying. But this was not the only source of these primitive ideas in regard to colour; the therapeutic effect was often sought and found in some fancied analogy between the colour of the gem and the character of the malady or infirmity to be cured. Thus, yellow stones were supposed to be especially efficacious in cases of jaundice, an instance of instinctive homœopathy, based on the dictum similia similibus curantur.

The symbolical significance of the colours of precious stones is treated at considerable length by Giacinto Gimma, who has gathered together a great quantity of material on the subject.

Yellow worn by a man denoted se-

crecy, and was appropriate for the silent lover; worn by a woman it indicated generosity. Golden yellow was, of course, the symbol of the sun and of Sunday. The precious stone was the chrysolite or the yellow jacinth. The animal connected with the colour was the lion, doubtless from the association of the zodiacal sign Leo with the midsummer sun. Of the seven ages of man yellow typified adolescence. Roman matrons covered their heads with a yellow veil to show their hope of offspring and happiness.

White signified for men friendship, religion, integrity; for women, contemplation, affability, and purity. It was associated with the moon and with Monday and was represented by the pearl. The animal having an affinity with white was quite naturally the ermine. The mystic number was seven, and white was the colour of infancy. Among the ancients white was a sign of mourning and sadness, and the Greek matrons attired themselves in white on the death of their husbands.

Red garments on a man indicated command, nobility, lordship, and vengeance; on a woman, pride, obstinacy, and haughtiness. This was the colour of the planet Mars and of Tuesday; it was represented by the ruby. Why the lynx should have been selected as the animal for red is rather difficult to understand, but, as the most vivid colour, the choice of red as a type of full manhood need not surprise us. Its number was the potent nine, three multiplied by itself. The ancients covered with a red cloth the biers of those who had died valiantly in battle, as Homer shows when he relates that the brothers and companions of Hector covered the urn containing the hero's ashes with soft purple (scarlet) robes.

Blue on a man's dress indicated wisdom and high and magnanimous thoughts; on a woman's dress, jealousy in love, politeness, and vigilance. Friday and Venus were represented by blue, and the celestial-hued sapphire was the stone in which this colour appeared in all its beauty.

Green signified for men joyousness, transitory hope, and the decline of friendship; for women, unfounded ambition, childish delight, and change. The early verdure of spring might be regarded as at once a symbol of hope and of eventual disappointment, for it must soon pass away. Mercury, and Wednesday, the day of Mercury, were both typified by green, the sly fox being selected as the animal in sympathy with the wily god.

Black for men means gravity, good sense, constancy, and fortitude; for young women, fickleness and foolishness, but for married women, constant love and perseverance. The planet Saturn and Saturday are denoted by black. Strange to say, the diamond, the white gem par excellence, was selected to represent this sombre hue. Perhaps to offset this the animal chosen was the hog.

Violet for a man denoted sober judgment, industry, and gravity; for a woman, high thoughts and religious love. It was the colour of the planet Jupiter and of Thursday. As with blue, the sapphire was conceived to present violet most attractively. That the bull should be selected as the animal represented by this colour probably arose from some mythological connection with Jupiter, possibly the myth of Europa and the bull.

The influence of colour upon the nerves has been noted by some of the leading authorities on hypnotism. For example, Dr. Paul Ferez, finding that red light is stimulating and blue-violet calming, suggests that those who treat patients by means of hypnotism should have two rooms for their reception. In one of these rooms the curtains, wall-paper, chair-coverings, etc., would be red, while the other they would be of a violet-blue hue. Those suffering from a lack of will-power or from lassitude and depression are to be received in the red room, and those who are a prey to over-excitability are introduced into the blue room. Moreover, according to Dr. Ferez, the sedative qualities of the violet-blue can be utilized in inducing the hypnotic state.

In an ancient Egyptian burial-place at Shêch Abd el Qurna, excavated by Passalaqua, was found the mummy of a young woman. Not only was it evident from the rich ornaments adorning the body that she had been of noble birth, but it was also apparent that she must have been exceedingly beautiful in form and feature, and must have died in the flower of her age. The hair was artistically braided and adorned with twenty bronze hairpins. About her neck was a remarkably beautiful necklace composed of four rows of beads with numerous pendants representing divinities and sacred symbols. There were also two smaller necklaces with beads of gold, lapis-lazuli, and carnelian; two large jewelled earrings hung from her ears, and on the index-finger of her right hand was a ring set with a scarab; a gold belt garnished with lapis-lazuli and carnelians was bound about her waist and a gold bracelet adorned with semi-precious stones encircled her left wrist. In the sarcophagus was a beautiful mirror of golden-yellow bronze, and three alabaster vases, one still containing some balm or perfume, and another some galena (native lead sulphide) to be used as a cosmetic for the eyes, as well as a little ebony pencil for its application. All these objects are now in the Egyptian collection of the Berlin Museum, and they probably belong to the period of the XVIII Dynasty, about 1500 B. C.

The principal necklace was undoubtedly regarded by the fair Egyptian as an amulet of great power, but it failed to protect her from an untimely end; perhaps, however, its virtues may have aided her soul in its passage through the trials and tests imposed in the under-world.

That gems had sex is asserted by the earliest writers as well as by many of those of a later date. While this must usually be understood as a poetic way of indicating a difference in shade, the darker varieties being regarded as male and the lighter ones as female, Theophrastus, the earliest Greek writer on precious stones, clearly shows that this sexual distinction was sometimes seriously made, for he declares that, wonderful as it might seem, certain gems were capable of producing offspring.

This strange idea was still prevalent in the sixteenth century, and ingenious explanations were sometimes given of the cause of this phenomenon, as appears in the following account by Rueus of germinating diamonds: "It has recently been related to me by a lady worthy of credence," he writes, "that a noblewoman, descended from the illustrious house of Luxemburg, had

in her possession two diamonds which she had inherited, and which produced others in such miraculous wise, that whoever examined them at stated intervals judged that they had engendered progeny like themselves. The cause of this (if it be permissable to philosophize regarding such a strange matter) would seem to be that the celestial energy in the parent stones, qualified by some one as 'vis adamantifica,' first changes the surrounding air into water, or some similar substance, and then condenses and hardens this into the diamond gem."

The pearl-fishers of Borneo are said to preserve carefully every ninth pearl they find, and place them in a bottle with two grains of rice for each pearl, believing, in spite of all evidence to the contrary, that these particular pearls have the power to engender and breed others.

1. A necklace of banded and variegated agates, onyx, carnelians and sards. First Century A. D.
2. Beads of carnelian artificially marked for "good luck." The marking is produced by an application of potash and soda. Ancient Persian.

The virtue believed to be inherent in precious stones was thought to gain an added potency when the stone was engraved with some symbol or figure possessing a special sacredness, or denoting and typifying a special quality. This presupposes a considerable development of civilization, since the art

of engraving on precious stones offers many mechanical difficulties and thus requires a high degree of artistic and mechanical skill. It is true that the earliest engraved stones, the Babylonian cylinders and the Egyptian scarabs, were both designed to serve an eminently practical purpose as well, namely, that of seals; but in a great number of instances these primitive seals were looked upon as endowed with talismanic power, and were worn on the person as talismans.

The scarab, for the Egyptians a type of the rising sun and hence of the renewal of life after death, was copied by the Phœnicians from the Egyptian types and modified in various ways to suit the religious fancies of the various lands to which they bore the products of their art. Much of the original significance of this symbol must have been lost; probably in many cases little was left but a vague idea that an amulet of this form would bring good luck to the wearer and guard from harm.

An interesting Egyptian talisman in the Louvre is engraved with a design representing Thothmes II seizing a lion by the tail and raising the animal aloft; at the same time he brandishes in the other hand a club, with which he is about to dash out the lion's brains. The Egyptian word quen, "strength," is engraved beneath the design and indicates that the virtue of the talisman was to increase the strength and courage of the wearer, the inscription being a kind of perpetual invocation to the higher powers whose aid was sought.

The Cretan peasants of today set a high value upon certain very ancient seals—dating perhaps from as early as 2500 B. C.—which they find buried in the soil. These seals are inscribed with symbols supposed to represent the prehistoric Cretan form of writing. Of course these inscriptions, which have not yet been deciphered by archæologists, are utterly incomprehensible for the peasants, but they undoubtedly serve to render the stones objects of mystery. The peasants call them galopetræ, or "milk-stones," and they are supposed to promote the secretion of milk, as was the case with the galactite. The careful preservation of these so-called galopetræ by Cretan women has served the purpose of archæological research, as otherwise so large a supply of these very interesting seals would not now be available.

In Roman times the image of Alexander the Great was looked upon as possessing magic virtues, and it is related that when Cornelius Macer gave a splendid banquet in the temple of Hercules, the chief ornament of the table was an amber cup, in the midst of which was a portrait of Alexander, and around this his whole history figured in small, finely engraved representations.

A curious amulet, apparently belonging to the Gnostic variety, and intended to bring success to the owner of a racehorse, is now in the collection of the Metropolitan Museum of Art, in New York. The material is green jasper with red spots. On the obverse the horse is figured with the victor's palm and the name Tiberis; on the reverse appears the vulture-headed figure of the Abraxas god and the characters, "ZACTA IAW BAPIA," which have been translated, "Iao the Destroyer and Creator." Possibly this amulet may have been attached to the horse during his races

to insure victory, as we know that amulets of this kind were used in this way.

It is well known that Napoleon III was inclined to be superstitious, and there is not, therefore, anything inherently improbable in the report that he left the seal he wore on his watch-chain to his son, the unfortunate Prince Imperial, as a talisman. This seal is said to have borne an inscription in Arabic characters, signifying "The slave Abraham relying on the Merciful One (God)." The talisman lost its virtue on that unlucky day when, in far-off Zululand, the heir to so many hopes was cut off in the first flush of early manhood.

This most interesting seal is described by the Rev. C. W. King, the writer on Antique Gems. It is carnelian, octagonal-shaped, and upon it is engraved the legend: "The slave Abraham relying upon the Merciful (God)." Napoleon III wore it on his watch-chain. He said about it: "The First Consul picked it up with his own hands during the campaign in Egypt and always carried it about him, as his nephew did later." The Prince Imperial received it with the following message: "As regards my son, I desire that he will keep, as a talisman, the Seal which I used to wear attached to my watch." He carried the seal upon a string fastened about his neck in obedience to the injunction of his father. At the time of his lamentable death it must have been carried off in South Africa by the Zulus, when they stripped his body, and it has never been recovered.

There can be little doubt that much of the modern superstition regarding the supposed unluckly quality of the opal owes its origin to a careless reading of Sir Walter Scott's novel, "Anne of Geierstein." The wonderful tale therein related of the Lady Hermione, a sort of enchanted princess, who came no one knew whence and always wore a dazzling opal in her hair, contains nothing to indicate that Scott really meant to represent the opal as unlucky. Lady Hermione's gem was an enchanted stone just as its owner was a product of enchantment, and its peculiarities depended entirely upon its mysterious character, which might equally well have been attributed to a diamond, a ruby, or a sapphire. The life of the stone was bound up with the life of Hermione; it sparkled when she was gay, it shot out red gleams when she was angry; and when a few drops of holy water were sprinkled over it, they quenched its radiance. Hermione fell into a swoon, was carried to her chamber, and the next day nothing but a small heap of ashes remained on the bed whereon she had been laid.

It rarely happens that Pliny gives any information as to particular jewels, almost all his notices of precious stones being confined to descriptions of their form and colour, and data regarding what was popularly believed as to their talismanic or therapeutic power. In the case of the opalus, however, he writes as follows: "There exists today a gem of this kind, on account of which the senator Nonius was proscribed by Antony. Seeking safety in flight, he took with him of all his possessions this ring alone, which it is certain, was valued at 2,000,000 sesterces ($80,000)." The stone was "as large as a hazel-nut."

About the middle of the eighteenth century, a peasant found a brilliant precious stone in some old ruins at Alexandria, Egypt. This stone was set

in a ring. It was as large as a hazel-nut and is said to have been an opal cut en cabochon. According to the report, it was eventually taken to Constantinople, where it was estimated to be worth "several thousand ducats." The description given of this gem, its apparent antiquity, and the high value set upon it have contributed to induce many to conjecture that it was the celebrated "opal of Nonius." Of course this was nothing but a romantic fancy.

The Hindus believed that a flawed diamond, or one containing specks or spots, was so unlucky that it could even deprive Indra of his highest heaven. The original shape of the stone was also considered of great importance, more especially in early times, when but few, if any, diamonds, were cut. A triangular stone was said to cause quarrels, a square diamond inspired the wearer with vague terrors; a five-cornered stone had the worst effect of all, for it brought death; only the six-cornered diamond was productive of good.

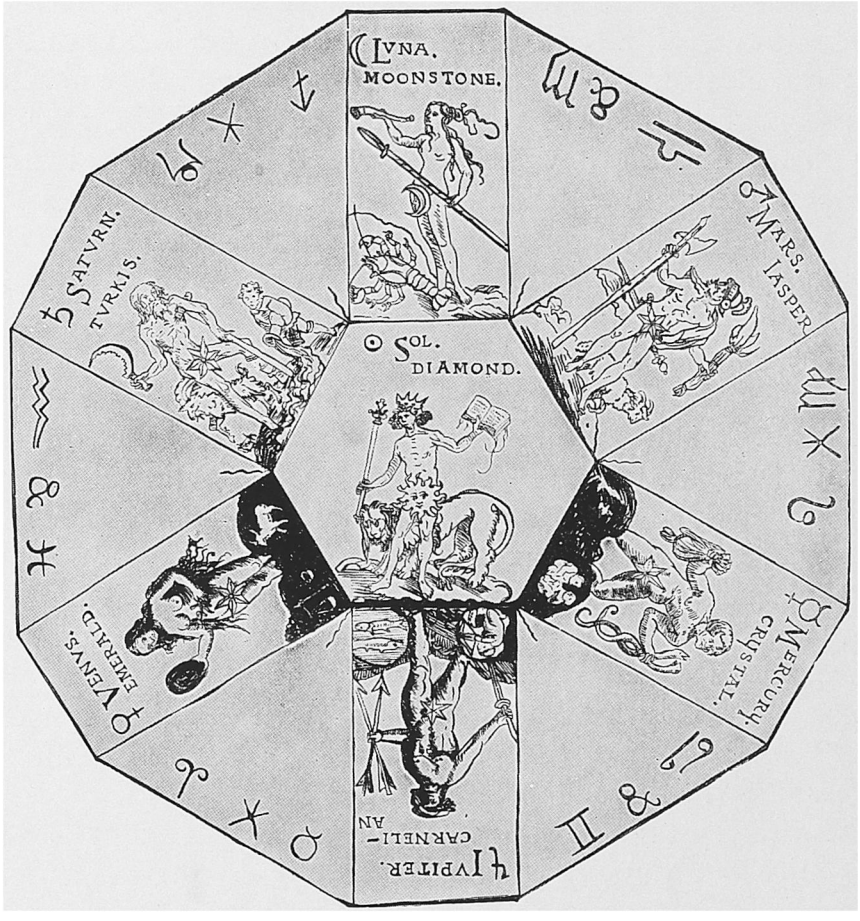
The Turkish sultan Bejazet II (1447-1512) is said to have been done to death by a dose of pulverized diamond administered to him by his son Selim, who mixed the diamond dust with the sultan's food. It is also related that the diciples of Paracelsus (1493-1541) spread the report that he died from the effects of a dose of diamond dust. Ambrosius conjectures that this was only an excuse to explain the demise of the master in the prime of life—he was but forty-eight years old at the time of his death—although he had promised long life to all who made use of his medicaments.

While Benvenuto Cellini (1500-1571), the unrivalled goldsmith, was imprisoned in Rome, in 1538, he strongly suspected that his enemies were seeking to poison him by tampering with his food. Cellini shared the belief of his contemporaries that there was no more deadly poison than diamond dust. One day, while eating his noonday meal, he felt something grate between his teeth. He paid no particular attention to this, but when he had finished eating his eye was caught by some bright particles on the plate. He took the splinter and tried to crush it between his knife and the stone window-sill; to his joy the attempt succeeded, and he became convinced that what he had swallowed was not diamond dust. Later, after his release, Cellini learned that an enemy had given a diamond to a certain Lione Aretino, a gem-cutter, instructing him to grind it up so that the dust could be placed in Cellini's food. The gem-cutter was very poor and the diamond was worth a hundred scudi, so the man yielded to temptation and substituted a citrine for the diamond. To this circumstance alone did Cellini attribute his escape from death.

This old fancy that diamonds or diamond dust had deadly effects when swallowed is pretty well exploded by this time, little or no confirmation being afforded by the instances cited in the matter. However, quite recently it has been shown that swollowing a diamond can prove fatal to a fowl. While a prize-winning cockerel was being fondled by his proud owner, it spied a flashing diamond set in a ring in his hand, and immediately pecked out the stone and swallowed it. Not long after, the fowl died—not, however, because it was poisoned by the diamond, but because it was chloro-

formed to insure the speedy recovery of the stone.

During the Terror, among those upon whom fell the suspicions of the Jacobins was General Marlière. He knew that a trial and quite probably a condemnation awaited him. A few days before the date fixed for his appearance before his judges, he met a colonel in the French army, who had served in the American Revolution War, and who was a firm believer in the truth of the visions seen in crystal balls. In the course of the conversation this subject was alluded to, and the general immediately declared that he was eager to put the matter to the test, and learn, if possible, what fate was in store for him. The colonel was at first very unwilling to undertake the experiment, probably he thought that General Marlière's doom was sealed, and, believing as he did in the revelations of the crystal, he dreaded the results; however, the general insisted and the experiment took place. As usual, the medium was an "innocent child." In the crystal appeared a man wearing a private's uniform of the National Guard struggling with one wearing a general's uniform. The child was much excited and terrified by the sight, exclaiming that



THE FIGURES OF THE PLANETS WITH THEIR SIGNIFICANT STONES

Old print showing the Roman types of the days of the week and also the stones and zodiacal signs associated with each day. Here we have Diana, with the sign of Cancer and the moonstone, for Monday; Mars, with the sign Capricorn and the jasper, for Tuesday; Mercury, with Gemini and the rock-crystal, for Wednesday; Jupiter, with Sagittarius and Pisces and the carnelian, for Thursday; Venus, with Taurus and the emerald, for Friday; and Saturn, with Capricorn and Aquarius and the turquoise for Saturday.

the general's assailant had thrown him down and was beheading him. That the vision protended the general's execution was clear enough, but the peculiar dress of the executioner was a mystery to those present at the test, for the official garb bore no resemblance whatever to a soldier's uniform. The prediction was, however, fulfilled to the letter. General Marlière was tried, found guilty, and guillotined. This in itself did not mean much in view of the innumerable executions in the time of the Terror; but, on the day of this execution, Samson, the official executioner, desiring to gratify his personal vanity and to attract the gaze of the spectators, dressed himself in the uniform of a national guardsman. That this altogether unusual circumstance, which could scarcely have been known to any of those who assisted at the crystal-gazing, should have been revealed in the crystal, is very mysterious. If we had positive assurance that the events narrated happened exactly in the way they are said to have happened, this would be one of the few instances in which the vision seen in the crystal reproduced something entirely unknown to the scryer.

What are the laws that govern the production of these phenomena? That the "visions" are real enough has been proven time and again, but it seems almost certain that they do not offer anything but the ideas or impressions existing in the minds or optic nerves of the gazers. One of the most painstaking students of the subject, Miss Goodrich-Freer, gives many instances in proof of this, which show how easy it would be for a less critical observer to suppose that the crystal revealed something unknown to the gazer. On one occasion this lady was at a loss to remember the correct address of a friend whose letter, received a few days before, she had torn up. She resorted to her crystal, and after a few minutes saw in it, in gray letters on a white ground, the address she had forgotten. She mailed her answer to this address, and the reply came duly to hand, with the address stamped in gray upon the white paper of the note, which was identical with that she had first received. The visual impression had been stirred up and "externalized" itself when she gazed upon the crystal. We believe that this explains the larger number of such visions, and that the rest are only inexplicable because the scryer has forgotten the source of the impression that is projected on the surface of the crystal.

Very early, and very naturally, the religious nature of man led to the use of precious stones in connection with worship—the most valuable and elegant objects being chosen for sacred purposes. Of this mode of thought, we have a striking instance in the accounts given, in the book of Exodus, of the breastplate of the High-priest, and the gems contributed for the tabernacle by the Israelites in the wilderness.

The origin of the belief that to each month of the year a special stone was dedicated, and that the stone of the month was endowed with a peculiar virtue for those born in that month and was their natal stone, may be traced back to the writings of Josephus, in the first century of our era, and to those of St. Jerome, in the early part of the fifth century. Both these authors distinctly proclaim the connection between the twelve stones of the high-priest's

breastplate and the twelve months of the year, as well as the twelve zodiacal signs.

It is interesting to show from various ancient lists, eight in number, the stones which are most favoured in each month:

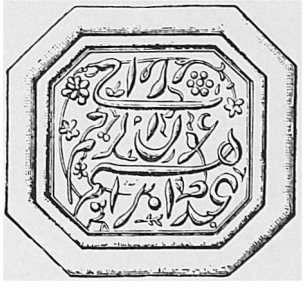
January . . . . Garnet, hyacinth.
February . . . Amethyst, hyacinth, pearl.
March . . . . . Jasper, bloodstone.
April . . . . . Sapphire, diamond.
May . . . . . Agate, emerald, chalcedony, carnelian.
June . . . . . Emerald, agate, chalcedony, turquoise, pearl, cat's-eye.
July . . . . . Onyx, sardonyx, carnelian, ruby, turquoise.
August . . . . Carnelian, sardonyx, moonstone, topaz, alexandrite.
September . . Chrysolite, sardonyx.
October . . . . Beryl, aquamarine, opal.
November . . Topaz, pearl.
December . . Ruby, turquoise, chrysoprase, bloodstone.

The stone first named for its months is the one given most frequently in the eight lists.

As it might seem appropriate that one born in the United States should wear a gem from among those which our country furnishes, the following list was some time since prepared by Dr. Kunz, not in any sense as a substitute for the real birth-stones, but as possible accessory gems (when they were not identical), gems which might be worn from a spirit of patriotism. Of course where the stone in question is really that traditionally recommended. the fact that it is at the same time an American gem-stone is an added argument in its favour.

Month	Stones	Where Found
January	Garnet, rhodolite	Montana, New Mexico, Arizona, North Carolina
February . . .	Amethyst	N. Carolina, Georgia, Virginia
March	Californite	California
April	Sapphire	Montana, Idaho
May	Green tourmaline	Lake Superior
June	Moss-agate	California, Montana, Wyoming, Arizona
July	Turquoise	New Mexico, California, Arizona
August	Golden beryl	California, Connecticut, N. Carolina
September . .	Kunzite	California
October	Aquamarine	N. Carolina, Maine, California
November . .	Topaz	Utah, California, Maine
December . .	Rubellite	Montana

The year is divided into four seasons or cycles,—spring, summer, fall, and winter,—and each season has its particular gem. The emerald is the gem of spring, the ruby the gem of summer, the sapphire the gem of autumn, and the diamond the gem of winter.



Carnelian Seal, worn by Napoleon I, Napoleon III, and the Prince Imperial